CARDIAC ARREST - PEDIATRIC
(Less than 15 years of age)

I. FIELD ASSESSMENT/TREATMENT INDICATORS

Cardiac arrest in a non-traumatic setting. Consider the potential causes of arrest for age.

II. BLS INTERVENTIONS

- Assess patient, maintain appropriate airway; begin CPR according to current AHA Guidelines.
  - Ventilate at rate of 12 to 20 per minute. Ventilatory rate will decrease as patient age increases. Ventilatory volumes shall be the minimum necessary to cause chest rise.
  - Compression rate shall be a minimum of 100 per minute.
- If patient one (1) year of age or older, utilize AED.

III. LIMITED ALS (LALS) INTERVENTIONS

- Initiate CPR while applying the AED.
- Follow the instructions from the AED to determine if shock is needed.
- Obtain IO/IV access (IO is preferred for under nine (9) years of age).
- Establish advanced airway when resources are available, with minimal interruption to CPR.
- For continued signs of inadequate tissue perfusion, administer fluid bolus of NS. Reassess after each bolus. May repeat two (2) times for continued signs of inadequate tissue perfusion. In RCF, may give two (2) additional fluid boluses if indicated.
  - 1 day to 8 years: 20 ml/kg NS
  - 9 to 14 years: 300 ml NS

- Obtain blood glucose level, if indicated administer;
  - Dextrose as per ICEMA Reference #7040 - Medication - Standard Orders.
  - May repeat blood glucose level. Repeat Dextrose per ICEMA Reference #7040 - Medication - Standard Orders if indicated.
  - Administer Glucagon per ICEMA Reference #7040 - Medication - Standard Orders, if unable to start an IV.
- If suspected narcotic overdose with severely decreased respiratory drive administer:
  - Naloxone per ICEMA Reference #7040 - Medication - Standard Orders.
- Base hospital physician may order additional medication dosages and additional fluid boluses.

IV. ALS INTERVENTIONS

- Initiate CPR while applying the cardiac monitor.
- Determine the cardiac rhythm and defibrillate at 2 j/kg (or manufacturer's recommended equivalent) if indicated. Begin a two (2) minute cycle of CPR.
- Obtain IO/IV access (IO is preferred).
- Establish advanced airway when resources are available, with minimal interruption to CPR.
- Insert NG/OG tube after advanced airway is established or if not placed with BLS airway.
- Continue CPR with compressions at a minimum of 100 /min without pauses during ventilations. Ventilations should be given at a rate of one (1) breath every six (6) to eight (8) seconds.
- Utilize continuous quantitative waveform capnography, for confirmation and monitoring of endotracheal tube placement and for assessment of ROSC and perfusion status.

Ventricular Fibrillation/Pulseless Ventricular Tachycardia

- Initial defibrillation is administered at 2 j/kg (or manufacturer's recommended equivalent). Second defibrillation is administered at 4 j/kg. Third and subsequent defibrillation attempts should be administered at 10 j/kg not to exceed the adult dose.

- Perform CPR for two (2) minutes after each defibrillation, without delaying to assess the post-defibrillation rhythm.

- Administer Epinephrine, per ICEMA Reference #7040 - Medication - Standard Orders, during each two (2) minute cycle of CPR after each defibrillation unless capnography indicates possible ROSC.

- Reassess rhythm after each two (2) minute cycle of CPR. If VF/VT persists, defibrillate as indicated above.

- After two (2) cycles of CPR, consider administering Lidocaine per ICEMA Reference #7040 - Medication - Standard Orders, may repeat.

- If patient remains in pulseless VF/VT after five (5) cycles of CPR, consult base hospital.

Pulseless Electrical Activity/Asystole

- Assess for reversible causes and initiate treatment.

- Continue CPR with evaluation of rhythm every two (2) minutes.

- Administer initial fluid bolus of 20 ml/kg NS for all ages, may repeat at:

  - 1 day to 8 years: 20 ml/kg NS

  - 9 to 14 years: 300 ml NS

- Administer Epinephrine, per ICEMA Reference #7040 - Medication - Standard Orders, during each two (2) minute cycle of CPR after each rhythm evaluation.

Treatment Modalities for Managing Pediatric Cardiac Arrest Patient

Whenever possible, provide family members with the option of being present during the resuscitation of an infant or a child. For any termination of efforts, base hospital contact is required.

- Insert NG/OG tube to relieve gastric distention if the patient has been intubated with an advanced airway, or if the patient has a BLS airway, per ICEMA Reference #10190 - ICEMA Approved Skills.

- For continued signs of inadequate tissue perfusion, administer fluid bolus of NS. Reassess after each bolus. May repeat twice for continued signs of inadequate tissue perfusion. In RCF, may give two (2) additional fluid boluses if indicated.
  - 1 day to 8 years: 20 ml/kg NS
  - 9 to 14 years: 300 ml NS
- Obtain blood glucose level. If indicated administer:
  - Dextrose per ICEMA Reference #7040 - Medication - Standard Orders.
  - May repeat blood glucose level. Repeat Dextrose per ICEMA Reference #7040 - Medication - Standard Orders if indicated.
  - Naloxone for suspected opiate overdose per ICEMA Reference #7040 - Medication - Standard Orders.

If ROSC is achieved, obtain a 12-lead ECG.

- Utilize continuous waveform capnography, to identify loss of circulation.
- For continued signs of inadequate tissue perfusion **after** successful resuscitation:
  - Epinephrine per ICEMA Reference #7040 - Medication - Standard Orders.
  - 9 to 14 years: Dopamine per ICEMA Reference #7040 - Medication - Standard Orders.
- Base hospital physician may order additional medications or interventions as indicated by patient condition.

V. REFERENCES

Number	**Name**
7040	Medications - Standard Orders
10190	ICEMA Approved Skills